E907 Systems

- **BEAM** Beam
- **MAG** Magnets
- **UBL** Beamline detectors - tracking, tagging
- **TGT** Targets
- **TRD** Target recoil detector
- **TPC** Time projection chamber
- **CKOV** Cerenkov
- **TOF** Time of flight
- **RICH** Ring imaging Cerenkov
- **DC** Drift chambers
- **NCAL** Neutral calorimeter
- **TRG** Trigger
- **DAQ** Data acquisition

Conceptual Design Topics

- Operational System Description
- Refurbishment / Checkout / One-Time Calibration
- Hardware Installation
- Cable Plant
- Services and Infrastructure
- Maintenance, Consumables
- Data Acquisition
- Control
- Calibration
- Data Reduction

Conceptual Design Topic Details

- **Operational Description**
  - What is it?
  - What is its role in the experiment?
    - How does it accomplish this role?
  - Physical description
  - Location
  - Constraints
  - Requirements
  - Block diagram of all connections and services

Beam Tagging Ckov

threshold Ckov

tag K, not proton in beam

separate beam trigger,

N_2 gas, PMT to discrim, . . .

30 cm Ø, 2 m long, picture

- **Refurbishment / Checkout / One-Time Calibration**
  - Anything that we do before it hits the floor.
- **Hardware Installation**
  - How does it get there? before or after what? by how many people?
  - What holds it in position?
  - Survey and alignment procedure
  - Cable plant - where does it run, how is it pulled?

Conceptual Design Topic Details

- **Services and Infrastructure**
  - Electrical, HV, gas, water, . . .
  - Define the interface – Who installs it? up to where? connector format?
- **Maintenance, Consumbles**
  - Burn rate, refueling procedure
- **Data Acquisition**
  - Front end signal conditioning
  - Define the interface to E907 DAQ – Data format, connectors, location
- **Control – Define the control I/O interface**
- **Calibration**
  - Sources? pulsers? cosmics? special DAQ modes?
  - Procedure, statistics, calibration frequency
  - Data format

Conceptual Design Topic Details

- **Data Reduction**
  - **Outline 0th order algorithm**
    - **Hits → rings → tracks**
    - **Track matching between detectors**